



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

Subject: IDENTIFICATION AND
REGISTRATION MARKING

Date: 4/16/92
Initiated by: AIR-200

AC No: 45-2A
Change:

1. PURPOSE. This advisory circular (AC) updates the guidance and information concerning the identification and marking requirements of Federal Aviation Regulations (FAR) Part 45, and describes an acceptable means, but not the sole means, of compliance with the regulations.

2. REFERENCES.

a. Federal Aviation Regulations Parts 21, 25, 45, and 47.

b. Advisory Circular 20-62, Eligibility, Quality, and Identification of Approved Aeronautical Replacement Parts, and AC 20-65, U.S. Airworthiness Certificates and Authorization for Operation of Domestic and Foreign Aircraft.

3. CANCELLATION. Advisory Circular 45-2, Identification and Registration Marking, dated July 7, 1972, is cancelled.

4. GENERAL. Under the provisions of the Federal Aviation Act of 1958 and implementing FAR, except as provided in FAR section 21.182(b)(2), a civil aircraft must be registered and identified before it may be operated in the United States. Federal Aviation Regulations Part 45 contains provisions concerning display and description of nationality and registration marks on U.S. aircraft. Section 21.182 of the FAR, requires each applicant for an airworthiness certificate to show that the aircraft is identified as required in FAR section 45.11. Part 45 of the FAR sets forth the requirements for display of nationality and registration marks; display of special airworthiness classification marks: identification plates for aircraft, aircraft engines, propellers; and identification of certain replacement and critical aircraft parts and components.

5. IDENTIFICATION OF AIRCRAFT AND RELATED PRODUCTS. The following paragraphs provide an acceptable means of compliance with the identified sections of FAR Part 45, Subpart B.

a. Section 45.11, General. The term fireproof, as it relates to identification plates referenced throughout this section, is defined by FAR section 1.1 to mean the capacity to withstand the heat associated with fire at least as well as steel in dimensions appropriate for the purpose for which they are used.

b. Section 45.11(b), Propellers and Propeller Blades and Hubs. Marks required by this section are to be placed on a noncritical surface. If possible, for ease in identification, such marks should be placed where they are visible without disassembly of the propeller.

c. Section 45.11(d), Aircraft Identification Plate. Except as provided in subparagraph (2) below, aircraft manufactured before March 7, 1988, may display the identification plate required by FAR section 45.11(a) at an accessible exterior or interior location near an entrance, if the model and serial number are also displayed on the fuselage exterior. The display of the model and serial number may be accomplished by use of a decal, paint, or bonded placard which meets the legibility and location requirements of FAR section 45.11(a). These marks should be displayed in such a manner that they are not likely to be defaced or removed during normal service.

(1) An "accessible location near an entrance" for an aircraft identification plate may be either external or internal, and would be considered acceptable when it is visible to a person at, or within, the entrance to the aircraft. "Accessible" does not mean that the identification plate must be visible from the outside or without opening the door, or that it must be visible without removing things such as baggage or carry-on items from the aircraft. For an aircraft with more than one door, the entrance most used by the flight and servicing crews would be considered the most appropriate location for the identification plate. If, under certain conditions, the plate is covered or enclosed in any manner, its accessibility would be considered acceptable if it can be revealed without the use of tools or removing aircraft components.

(2) Factory-installed identification plates on some models have been previously determined to be "accessible" because they are installed on the fuselage exterior near the tail surface. In these instances, an additional identification plate is not required. Owners are not expected to relocate factory-installed identification plates required under FAR section 45.11(d), as this would be in violation of FAR section 45.13(c).

d. Section 45.13(a)(1), Aircraft Builder. The "builder's name" on the identification plate may be an individual, firm, co-partnership, corporation, company, association, or joint-stock association, and would include an amateur-builder or

aircraft manufacturer. For an aircraft built from spare and surplus parts, the builder's name would be that of the person who assembled the aircraft and not the name of the manufacturer who builds the same model of aircraft.

e. Section 45.13(a) (3). Serial Numbers. For an aircraft built from spare and surplus parts, any serial number assigned by the builder would be acceptable if it could not be confused with those assigned by the manufacturer who builds the same model of aircraft under a production approval. It is suggested that a letter prefix or suffix, such as the builder's name or initials, be used with the number to provide positive identification.

f. Section 45.13(a) (4). Type Certificate Number. Standard classification aircraft built from spare and surplus parts should include the type certificate number of the aircraft model on which conformity has been shown.

g. Section 45.13(a) (5). Production Certificate Number. It is not considered acceptable for the production certificate number to be shown on the identification plate for aircraft that are built prior to inclusion of that model aircraft on the production limitation record (reference FAR section 21.151).

h. Section 45.13(a), Aircraft and Related Products Produced Under Licensing Agreement. For the purpose of complying with FAR section 45.13(a) and the fireproof identification marking requirements of FAR section 45.11(a), (b), and (c), the following would apply:

(1) The builder's name is the name of the licensee as reflected on the licensee's production certificate.

(2) The model designation would be as indicated on the type certificate.

(3) The builder's serial number as selected from a block of numbers assigned to the builder by the type certificate holder.

(4) The type certificate number, as identified on the type certificate.

(5) The production certificate number, as issued to the licensee.

(6) For aircraft engines, the established rating as shown on the type certificate.

6. DISPLAY OF NATIONALITY AND REGISTRATION MARKS. The requirements for display of nationality and registration marks, called "identification numbers" in FAR Part 47, are in FAR Part 45, Subpart C. The following guidance provides an acceptable means of compliance with Subpart C.

a. Section 45.21(b), Modifying or Confusing Nationality and Registration Marks.

(1) It is unacceptable to place any emblem, symbol, or decoration between the "N" and the registration number, or between any of the letters or numbers in the registration number.

(2) Company names, trademarks, decorations, etc., that are placed on areas of the aircraft other than those prescribed for nationality and registration marks should be evaluated by the local Federal Aviation Administration (FAA) inspector to determine whether they impede or degrade legibility of the required nationality and registration marks.

b. Section 45.21(c) (1), Permanence. An acceptable means of compliance to secure the degree of permanence required by this section is to use paint of a kind that would require thinners or strippers to remove, or to affix the nationality and registration marks in the form of decals. The use of tape which can be peeled off or water-soluble paint, such as poster paint, is not considered acceptable. Such readily removable materials may be used only if FAR section 45.21(d) applies.

c. Section 45.21(c) (2), Ornamentation. This section prohibits the use of ornamentation. Shading, when it facilitates the reading of the nationality and registration marks, is not considered to be ornamentation. Similarly, a border around each character is not considered to be ornamentation, but it is considered to be a part of the character for the purposes of FAR sections 45.29(d) and (e).

d. Section 45.21(c) (3) and 45.21(c) (4), Legibility.

(1) Ornamentation and color contrast may affect the legibility of the nationality and registration marks. For example, nationality and registration marks may contrast in color with the background but still may not be legible if the background is highly decorated in some manner, such as checkering. One means of determining that required nationality and registration marks are legible would be the ability to clearly distinguish 12-inch marks without optical aid (e.g., binoculars, etc.) from a distance of 500 feet, in a horizontal line, perpendicular to the side of the aircraft during daylight hours. Any questions in this area should be resolved on an individual basis through consultation with the local FAA inspector.

(2) To promote a uniform interpretation of legibility, the requirements of FAR section 25.811(f)(2), Emergency Exit Marking, is recommended as a means of establishing contrast in compliance with FAR section 45.21(c). Although these requirements address transport category aircraft outside emergency exit marking, the definition can be used for all aircraft identification and registration markings. If an applicant demonstrates that the color scheme of their aircraft's nationality and registration marks meets FAR section 25.811(f)(2), the FAA will consider the aircraft to also comply with FAR section 45.21(c)(3). The reflectance of external markings can be checked by appropriate electro-optical instrumentation or **by** use of photometer card sets.

e. Section 45.22(b), Antiaue, Restored, or Replica Aircraft.

(1) Restored or replica aircraft would be considered eligible for the privileges extended in FAR section **45.22(b)** even though it may not be identical to the original in every detail. Minor differences in configuration due to modern equipment and components, such as use of a tail-wheel instead of tail-skid, main wheel brakes, or a modern type propeller, would be considered acceptable. Aircraft which qualify under FAR section 45.22(b) to use 2-inch nationality and registration marks may carry such marks anywhere on both sides of the fuselage or vertical tail, including under the horizontal stabilizer.

(2) When an aircraft is marked **as** described in FAR section **45.22(b)** (1)(ii), the airworthiness and registration certificates should not include the inserted symbol. For example, if the aircraft is marked "NX1234," the aircraft's airworthiness and registration certificates would read "N1234."

f. Section 45.23(a). Display of Nationality and Resistration Marks. Section 45.23(a) of the FAR requires that the registration number follow the letter "N." This means that the "N" and the registration number must be displayed in one horizontal line. The only allowable exception to the horizontal display requirement is for aircraft meeting the 3-inch high nationality and registration marks criteria of FAR section 45.29(b)(1). Section 45.25(b)(1) of the FAR provides the aircraft that may display the marks vertically on the vertical tail surfaces.

g. Section 45.23(b), Display of Airworthiness Cateaoxy Marks.

(1) The category identification required by this section should be visible to a person entering the aircraft. For an aircraft operated with multiple airworthiness certificates under FAR section 21.187, a removable category placard in letters not less than 2 inches nor more than 6 inches in height, with the words "limited," "restricted," "experimental," or "provisional airworthiness," as appropriate, is considered acceptable.

(2) When an aircraft is marked as described in FAR section 45.22(b)(1)(ii), the category identification requirements of this section do not apply.

h. Section 45.31, Marking of Export Aircraft. Based on a review of the historical origins of FAR section 45.31, the FAA has determined that this section was intended to apply when an aircraft intended for export is still U.S.-registered but has had nationality and registration marks assigned to it from another country; that is, the "State of Registry" referred to in FAR section 45.31 refers to the state of intended registry. Accordingly, such aircraft may display the nationality and registration marks of the other country rather than the U.S. marks, as follows:

(1) An aircraft prepared by a manufacturer for export which is already registered in its importing country, but has not been issued an airworthiness certificate from the importing country, may not display U.S. nationality and registration marks during operations in the United States. It is necessary to display the nationality and registration marks of the importing country and obtain a special flight authorization under FAR section 91.715 to operate these aircraft in the United States.

(2) An aircraft manufacturer preparing an aircraft for export that is still registered in the United States may display the nationality and registration marks of the state of intended registry for test and demonstration flights, including "photo flights," or while in necessary transit to the purchaser, in accordance with FAR section 45.31.

(3) Under FAR section 45.21(b) both United States and other countries nationality and registration marks may not be displayed simultaneously because it would cause confusion as to the correct nationality and registration marks.

7. NATIONALITY AND REGISTRATION MARKS ARE NOT PART OF THE TYPE DESIGN. Inquiries have been made concerning nationality and registration marks included in paint designs that have been incorporated in the engineering data which, in some instances, has been approved as part of the type design. It should be noted, however, that nationality and registration marks are not design requirements and are not approved as part of the type design. To eliminate any misunderstanding concerning the approval of nationality and registration marks, such marks are to comply with the requirements specified in FAR Part 45.

8. APPLYING NATIONALITY AND REGISTRATION MARKS ON ROTORCRAFT. Each operator of a rotorcraft shall display horizontally, nationality and registration marks at least 12 inches high on both external side surfaces of the rotorcraft cabin, fuselage, boom, or

tail. These surfaces of the rotorcraft include engine nacelles, roof structure, and fixed surfaces that remain visible from the side of the rotorcraft during all ground and air operations. Exceptions to this requirement, as provided by FAR section 45.29(b)(3), are discussed briefly in paragraph 9 below.

a. One means of determining that rotorcraft nationality and registration marks are displayed properly, would be that 12-inch marks are visible when viewed without the use of optical aids (e.g., binoculars, etc.) from a position of 500 feet, in a horizontal line, perpendicular to the side and center of the rotorcraft during daylight hours. The acceptable display areas for nationality and registration marks include:

(1) Cabin/Fuselage. The side surface areas of the cabin/fuselage including the roof structure, and hinge or sliding doors may be marked, provided that appropriate controls are in place to preclude the loss of the required identification when the door panels are replaced, and the nationality and registration marks are not covered by doors that can be opened in-flight.

(2) Boom. The side surfaces of the boom may be used to display horizontally, 12-inch high nationality and registration marks. However, to avoid the misreading of nationality and registration marks on an angled tailrotor pylon, an angled display is not permitted.

(3) Tail. The outboard surfaces of the vertical tail(s) may be used to display horizontally, 12-inch high nationality and registration marks, as required, if the rotor blades, guards or other appurtenances do not obstruct the display. Vertical nationality and registration marks are not permitted on rotorcraft.

b. If the authorized marking surfaces are too small for the display of 12-inch high nationality and registration marks, operators may display the nationality and registration marks as large as practicable on the largest of the authorized surfaces to maintain positive identification in accordance with FAR section 45.29(f).

9. REPAINTING AIRCRAFT NATIONALITY AND REGISTRATION MARKS. Federal Aviation Regulations Part 45, Subpart C, was amended effective November 2, 1981, (Amendment 45-13), to require the display of 12-inch high nationality and registration marks on aircraft in place of the smaller 2-inch and 3-inch numbers previously allowed. This was based on a determination that the 2-inch and 3-inch marks were too difficult to see. To preclude an undue burden on the aircraft owner/operators, FAR section 45.29 permits owners of certain aircraft to continue to display the smaller nationality and

registration marks until such time as the aircraft is repainted or the nationality and registration marks are repainted, restored, or changed. Section 45.29 of the FAR also excludes certain other aircraft from the 12-inch height requirement.

10. MISUSE OF AIRCRAFT IDENTIFICATION PLATES.

a. Part 45 of the FAR was amended effective September 4, 1979, (Amendment 45-10) to explicitly prohibit any person from removing, changing, or placing information on aircraft, aircraft engine, or propeller identification plates required by FAR section 45.11, and from installing or removing such identification plates without the approval of the Administrator. This amendment was in large part precipitated by the then existing practice of building an aircraft from spare parts and installing the identification plate from a scrapped or destroyed aircraft. It was intended that this rule change would serve as an effective tool which would discourage the misuse of identification plates. There have also been a number of advertisements in aviation oriented periodicals offering aircraft identification plates for sale, or indicating the need for certain identification plates. The purchasers of such identification plates would be in violation of FAR section 45.13(c) and/or (e) if they were to affix the identification plates, obtained as discussed above, on aircraft without approval of the FAA.

b. Specific approval of the Administrator is not required for persons performing work under FAR Part 43 in accordance with methods, techniques, and practices acceptable to the Administrator. These persons may remove an identification plate during certain maintenance operations such as caustic cleaning, paint removal, sandblasting, etc., when such work is being performed on the structure to which an identification plate is fastened. In all such instances, under FAR section 45.13(e), the identification plate which was removed during maintenance operations must be reinstalled on the product from which it was removed. Under no circumstances may a person performing work under FAR Part 43 install an identification plate that has been purchased or salvaged from another aircraft.

NOTE: Advisory Circular 43-17, Methods, Techniques, and Practices Acceptable to the Administrator Governing the Installation, Removal, or Change of Identification Data and Identification Plates, provides additional guidance on this subject.

11. HOW TO GET PUBLICATIONS. Federal Aviation Regulations and those AC's for which a fee is charged may be obtained from the superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. A listing of FAR and current prices is

4/16/92

AC 45-2A

available in AC 00-44, Status of Federal Aviation Regulations. A listing of all available **AC's** is in AC 00-2, Advisory Circular Checklist.

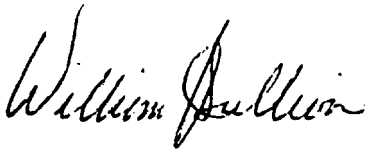
12. FREE PUBLICATIONS.

- a. To request free advisory circulars, contact:

U.S. Department of Transportation
Utilization and Storage Section, M-443.2
Washington, D.C. 20590

- b. To be placed on FAA's mailing list for free **AC's** contact:

U.S. Department of Transportation
Distribution Requirements
Section, M-494.1
Washington, D.C. 20590



William J. Sullivan
Acting Director, Aircraft Certification
Service

U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., SW
Washington, D.C. 20591

Official Business
Penalty for Private Use \$300

Postage and Fees Paid
Federal Aviation
Administration
DOT 515

